

# **A METHOD OF ESTABLISHING BI-DIRECTIONAL CONNECTIVITY OF A NETWORK ELEMENT IN A NETWORK**

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## **ABSTRACT**

15 The present invention describes a method and apparatus to ensure bi-  
directional connectivity between neighbor network elements in distance-vector  
protocol (e.g., EIGRP). The method further defines the dampening of neighbors that  
cannot establish a bi-directional connectivity. When a router receives an unreliable  
packet from a neighbor, the router adds the neighbor in neighbor table by gradually  
developing the reliability of the neighbor. First, the router adds neighbor's address  
into a dampening table and a 'neighbor pending' table. The router establishes a  
20 reliable communication with the neighbor. If the router cannot establish the reliable  
communication with the neighbor, the router dampens the neighbor and removes  
neighbor's address from 'neighbor pending' table. When the router establishes a  
reliable communication with the neighbor, the router 'promotes' the neighbor to the  
neighbor table. The router does not 'advertise' neighbor in its neighbor table until the  
25 neighbor is 'promoted' to the neighbor table.